



Best Management Practices for Construction and Development Projects

Prairie Massasauga

Sistrurus tergeminus tergeminus

Eastern Massasauga

Sistrurus catenatus

Common name • Prairie Massasauga
Scientific name • *Sistrurus tergeminus tergeminus*
Federal status • None
State status • Endangered

Common name • Eastern Massasauga
Scientific name • *Sistrurus catenatus*
Federal status • Candidate
State status • Endangered

Purpose and Use

The information in this document is to be used to help avoid and minimize species impacts due to construction practices. It is not intended to be used as a guide to manage habitat for a given species. If that is the goal, please contact the Department of Conservation for habitat management information. Because every project and location differs, following the recommendations within this document does not ensure that impacts will not occur to the species and additional information might be required in certain instances. Following the recommendations within this document does not complete Endangered Species Act consultation that may be necessary for species listed under the federal Endangered Species Act; please contact the U.S. Fish and Wildlife Service for more information.

Ecology

Prairie Massasaugas range from central Missouri and Iowa, westward into Colorado, and southward into Texas. Eastern Massasaugas range from central New York, westward into Minnesota, and southward into Missouri along the Mississippi River floodplain north of St. Louis. However, this species is considered extirpated from the state. The Prairie Massasauga rattlesnake occurs in north-central to northwestern Missouri, north of the Missouri River. This rattlesnake inhabits bottom or wet prairies dominated by cordgrass, sedges and bulrushes, as well as lowlands along rivers and lakes. Massasaugas are active during the day from mid-March to late October. They overwinter in moist lowland areas, using burrows made by crayfish or other animals for shelter. These snakes often show seasonal shifts in habitat use. They typically move from wet prairies in the spring, to drier uplands in the summer, and back to the wet prairies in the autumn. They are known to travel up to 1.6 miles or more between winter and summer

habitat. Mating mainly occurs in spring, and females give birth to 4-10 live young in late summer. Massasaugas prey on mainly deer mice, voles and shrews. These snakes are medium-sized and generally range from 18 to 30 inches.

Reasons for Decline

Although Massasaugas have a large historic range that encompasses many states, they are becoming rare or uncommon throughout much of their range, including Missouri. Cultivation, draining of marshes and indiscriminate killing of the snakes have greatly reduced their numbers. Much habitat has been lost as a result of human activities and natural succession, resulting in population reduction and fragmentation.

Specific Recommendations

Prairie Massasaugas require a mosaic of habitat types (wet prairies with crayfish burrows and adjacent upland prairie) to reproduce and safely overwinter. For this reason, it is important to minimize impacts of projects to all areas and types of habitat within the range of this species. As do many reptiles, Massasaugas play an important role in the food chain. These snakes may act as natural controls of populations of rodents that could damage crops and other vegetation.

- Avoid removing or destroying unique habitat features, such as downed trees, logs, rock piles and brush piles that provide habitat for the Massasaugas.
- Draining or destroying known wetland habitat should be avoided.
- Disposal of wastes and garbage should be done in designated areas far from wetlands.
- Avoid altering water levels in wetlands where Massasaugas are present.
- Compaction and alteration of soil (vehicle, heavy equipment, and ATV use, and disking, etc.) that directly impacts the species or its habitat (destroy crayfish burrows) should be avoided.
- Erosion and sediment controls should be strictly implemented, monitored and maintained for the duration of the project to decrease sedimentation into wetlands and adjacent habitat.
- Use of net-like mesh fabrics (plastics, nylon, twine, etc.) for erosion control should be avoided due to entrapment and entanglement hazards.

- Prescribed burning and mowing should be done during the period when snakes are dormant, preferably between October 31 and March 15.
- Refrain from moving levees or other high areas during high water events when Massasaugas may be using as refugia.
- If application of pesticides, herbicides, and fertilizers in or near seasonal wetlands is necessary, carefully follow all label directions and consider application of more wildlife and wetland friendly herbicides and pesticides.

General Recommendations

Refer to Management Recommendations for Construction Projects Affecting Missouri Wetlands and Management Recommendations for Construction Projects Affecting Missouri Streams and Rivers. Refer also to Amphibian and Reptile Management Guidelines.

If your project involves the use of Federal Highway Administration transportation funds, these recommendations may not fulfill all contract requirements. Please contact the Missouri Department of Transportation at 573-526-4778 or www.modot.mo.gov/ehp/index.htm for additional information on recommendations.

Information Contacts

For further information regarding regulations for development in wetlands, rivers and streams, contact:

For species information:

Missouri Department of Conservation

Resource Science Division
P.O. Box 180
2901 W. Truman Blvd
Jefferson City, MO 65102-0180
Telephone: 573/751-4115

For species information and Endangered Species Act Coordination:

U.S. Fish and Wildlife Service

Ecological Services
101 Park Deville Drive, Suite A
Columbia, MO 65203-0007
Telephone: 573/234-2132

For Clean Water Act Coordination:

Missouri Department of Natural Resources

Water Protection Program
P.O. Box 176
Jefferson City, MO 65102-0176
Telephone: 573/751-1300, 800/361-4827

U.S. Army Corps of Engineers

Regulatory Branch

700 Federal Building
Kansas City, MO 64106-2896
Telephone: 816/983-3990

U.S. Environmental Protection Agency
Water, Wetlands, and Pesticides Division
901 North 5th Street
Kansas City, KS 66101
Telephone: 913/551-7307

Disclaimer

These Best Management Practices were prepared by the Missouri Department of Conservation with assistance from state and federal agencies, contractors and others to provide guidance to those people who wish to voluntarily act to protect wildlife and habitat. Compliance with these Best Management Practices is not required by the Missouri wildlife and forestry law nor by any regulation of the Missouri Conservation Commission. Other federal laws such as the Clean Water Act and the Endangered Species Act, and state or local laws need to be considered for construction and development projects, and require permits and/or consultation with the appropriate agency. Following the recommendations provided in this document will help reduce and avoid project impacts to the species, but impacts may still occur. Please contact the appropriate agency for further coordination and to complete compliance requirements.